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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Marc Theisen

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EXAMINER

LAU, KEVIN

ART UNIT

PAPER NUMBER

2612

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,658	Applicant(s) THEISEN, MARC	
	Examiner KEVIN LAU	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-15 and 17-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-15 and 17-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/14/2006, 12/11/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 10-15 and 17-24 are pending in this application. Claims 1-9 and 16 have been cancelled.

This Office Action is in response to applicant's arguments filed on 7/26/2010.

Response to Amendment

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 10-11, 15, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caruso et al. (US 6548914) in view of Imai (JP2001-247001).

As per claim 10,

Caruso discloses a device for determining an instant a vehicle makes contact with an impact object (col. 2 lines 15-23: crash sensor), comprising: an arrangement for determining the instant of contact by approximating a signal derived from an acceleration signal using a function (col. 2 lines 24-41: deriving the velocity from the acceleration signal).

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Caruso does not disclose wherein the arrangement for determining uses a quadratic function.

Imai discloses wherein the arrangement for determining uses a quadratic function **(Abstract: the integration of the acceleration is approximated to a quadratic curve).**

At the time of invention, it would have been obvious to a person with ordinary skill in the art to modify Caruso's impact detection system to use a quadratic function, as taught by Imai.

The motivation would be to quickly determine if a collision has occurred **(Abstract).**

As per claim 11,

Caruso discloses further comprising: an arrangement for one of filtering the acceleration signal **(col. 3 lines 14-17: low pass filter).**

As per claim 15,

Caruso discloses further comprising: an arrangement for approximating the signal using at least two threshold values **(col. 2 lines 24-41: a minimum limit and a maximum limit value).**

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As per claim 17,

Caruso in view of Imai discloses wherein the arrangement for determining determines the instant of contact from a vertex of the quadratic function **(Imai: Abstract: locus of the integral of the deceleration)**.

As per claim 19,

Claim 19 is rejected in view of claim 15. Claim 19 states using four threshold values for approximating the signal, while claim 15 states using two threshold values for approximating the signal, therefore the limitations of claim 19 lacks criticality since the approximation can be done either with two or four threshold values. See In re Kuhle.

2. Claims 12-13, 20-21, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caruso et al. (US 6548914) in view of Imai (JP2001-247001) and in further view of Wang (US 5559697).

As per claim 12,

Caruso does not disclose further comprising: an arrangement for taking into account an impact velocity when determining the instant of contact.

Wang discloses further comprising: an arrangement for taking into account an impact velocity when determining the instant of contact **(Abstract: vehicle impact velocity can be obtained from speed sensors and determines severity of crash)**.

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At the time of invention, it would have been obvious to a person with ordinary skill in the art to modify Caruso's impact detection system to determine the impact velocity, as taught by Wang.

The motivation would be to utilize known parameters in a vehicle crash to determine whether a collision has occurred.

The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1395-97 (2007) identified a number of rationales to support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid down in *Graham*. The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit.

See MPEP Section 2143.

As per claim 13,

Caruso in view of Wang discloses wherein the arrangement for taking into account the impact velocity determines the impact velocity as a function of a vehicle velocity **(Abstract: vehicle impact velocity can be obtained from speed sensors and determines severity of crash).**

As per claim 20 and 24,

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Claim 20 and 24 is rejected in view of claim 21. Claim 20 and 24 states using four threshold values for approximating the signal, while claim 21 states using two threshold values for approximating the signal, therefore the limitations of claim 20 and 24 lacks criticality since the approximation can be done either with two or four threshold values. See In re Kuhle.

As per claim 21,

Caruso discloses further comprising: an approximating arrangement for approximating the signal using at least two threshold values **(col. 2 lines 24-41: a minimum limit and a maximum limit value)**.

3. Claim 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Caruso et al. (US 6548914) in view of Imai (JP2001-247001) and in further view of Wang (US 5559697) and in further view of Evans (US 6756887).

As per claim 14,

Caruso in view of Wang does not disclose wherein the arrangement for taking into account the impact velocity determines the impact velocity as a function of a surrounding-field signal.

Evans discloses wherein the arrangement for taking into account the impact velocity determines the impact velocity as a function of a surrounding-field signal **(col. 8 lines 18-37: the GPS is used to calculate the vehicle speed along with determination of a collision)**.

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At the time of invention, it would have been obvious to a person with ordinary skill in the art to modify Caruso in view of Wang's impact detection system to determine the impact velocity from a surrounding signal, as taught by Evans.

The motivation would be to augment the detection of the collision by taking into consideration a reasonable directional change for a given speed **(col. 7 line 62- col.8 line 23).**

4. Claims 18 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caruso et al. (US 6548914) in view of Imai (JP2001-247001) and in further view of Oishi et al. (US 3945459).

As per claim 18,

Caruso in view of Imai does not disclose further comprising: an arrangement for taking into account an impact velocity linearly in the determination of the instant of contact.

Oishi discloses further comprising: an arrangement for taking into account an impact velocity linearly in the determination of the instant of contact **(col. 13 line 52- col. 14 line 4: the attenuation is reduced to create a linear relationship for the impact velocity).**

At the time of invention, it would have been obvious to a person with ordinary skill in the art to modify Caruso in view of Imai's impact detection system to taking into account the impact velocity linearly, as taught by Oishi.

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The motivation would be to more accurately determine whether a collision has occurred **(col. 13 line 52- col. 14 line 4)**.

As per claim 22,

Caruso in view of Imai discloses wherein the determining arrangement determines the instant of contact from a vertex of the quadratic function **(Imai; Abstract: locus of the integral of the deceleration)**.

Caruso in view of Imai does not disclose wherein the determining arrangement takes into account an impact velocity linearly in the determination of the instant of contact.

Oishi discloses wherein the determining arrangement takes into account an impact velocity linearly in the determination of the instant of contact **(col. 13 line 52- col. 14 line 4: the attenuation is reduced to create a linear relationship for the impact velocity)**.

At the time of invention, it would have been obvious to a person with ordinary skill in the art to modify Caruso in view of Imai's impact detection system to taking into account the impact velocity linearly, as taught by Oishi.

The motivation would be to more accurately determine whether a collision has occurred **(col. 13 line 52- col. 14 line 4)**.

As per claim 23,

Caruso in view of Imai and in further view of Oishi discloses further comprising: an arrangement for approximating the signal using at least two

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threshold values (col. 2 lines 24-41: a minimum limit and a maximum limit value).

Response to Arguments

Applicant's arguments filed 7/26/2010 have been fully considered but they are not persuasive.

Regarding applicant's argument on pages 6-7 that Imai does not disclose using a quadratic equation for determining the instant of impact. Imai discloses using the quadratic curve for determining the impact, in which the system would have to detect an impact on the quadratic curve before it will determine what type it is. As drawings 5-9 show, the quadratic curve is based on time, therefore the impact determination would determine the impact location along the time axis, in which one of ordinary skill in the art would recognize that the instant of impact is determined when an impact is detected within the quadratic curve by looking at the time axis.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

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calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN LAU whose telephone number is (571)270-5168. The examiner can normally be reached on M-F 9:30 am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian A. Zimmerman can be reached on (571) 272-3059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KL/

/Brian A Zimmerman/
Supervisory Patent Examiner, Art Unit 2612